

Amendments to the Abstract:

Please replace the abstract with the following:

A manufacturing method and manufacturing device for high-precision thin film devices is disclosed, whereby the film thickness and film thickness distribution of a transparent film is measured to a high degree of accuracy during a CMP process without being affected by the film thickness distribution between LSI regions or within the semiconductor wafer surface generated by CMP processing. Film thickness is measured by specifying relatively level measurement regions, according to a characteristic quantity of the spectral waveform of the reflected light from the transparent film, such as the reflection intensity, frequency spectrum intensity, or the like, thereby permitting highly accurate control of film thickness. The leveling process in CMP processing can be optimized on the basis of the film thickness distribution. The film deposition conditions in the film deposition stage and the etching conditions in the etching stage can also be optimized. Accordingly, a high-precision semiconductor device can be manufactured.